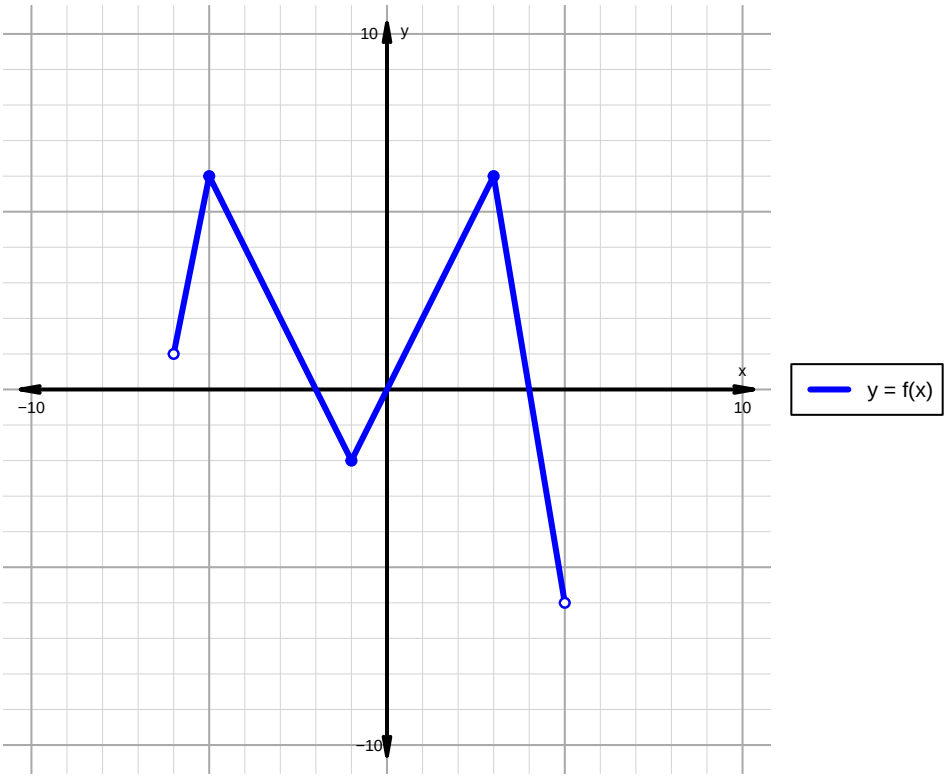
Name: Date:

Intervals, Transformations, and Slope Solution (version 45)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-2)\cup(0,4)$
Negative	$(-2,0)\cup(4,5)$
Increasing	$(-6,-5)\cup(-1,3)$
Decreasing	$(-5,-1)\cup(3,5)$
Domain	$(-6,5)$
Range	$(-6,6)$

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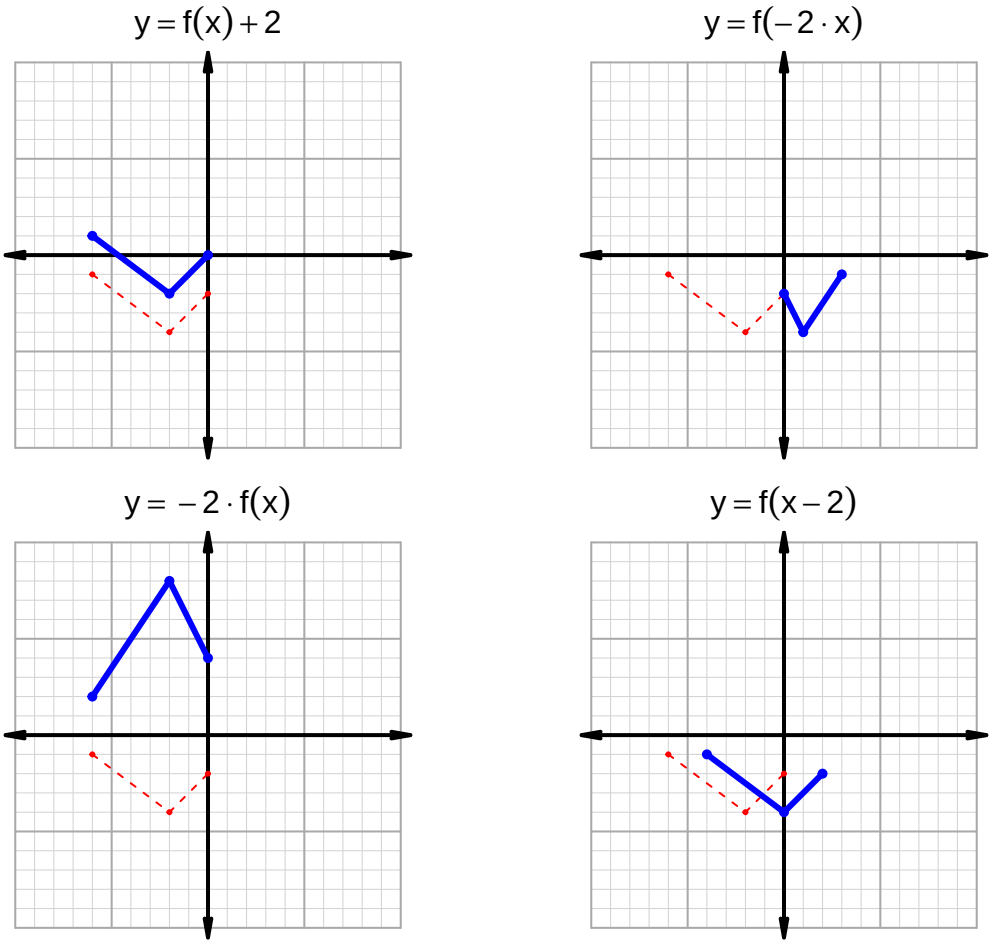
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 27$ and $x_2 = 90$. Express your answer as a reduced fraction.

x	$g(x)$
22	90
27	22
90	94
94	27

$\frac{g(90)-g(27)}{90-27} = \frac{94-22}{90-27} = \frac{72}{63}$

The greatest common factor of 72 and 63 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{7}$$